INSTRUCTIONS

GOVERNOR DATA

INTRODUCTION

This publication covers data pertaining to governors equipped with two-slope pressure bias control, those equipped with fuel limit control, and those equipped with altitude compensation. It is to be used when adjusting the governor on a test stand, with SAE 10W30 oil in the governor, and with the oil at a temperature of 140 F (60 C). Refer to adjusting instructions given in GEK-18113 for two-slope governors, to GEK-35817 for fuel-limiting governors, and to GEK-35930 for altitude-compensating governors.

For convenience purposes only, each governor has been given a line number in Governor Data Tables I and II. The line number will be used to designate the appropriate tables for each governor.

FIG. 1, E-16206A

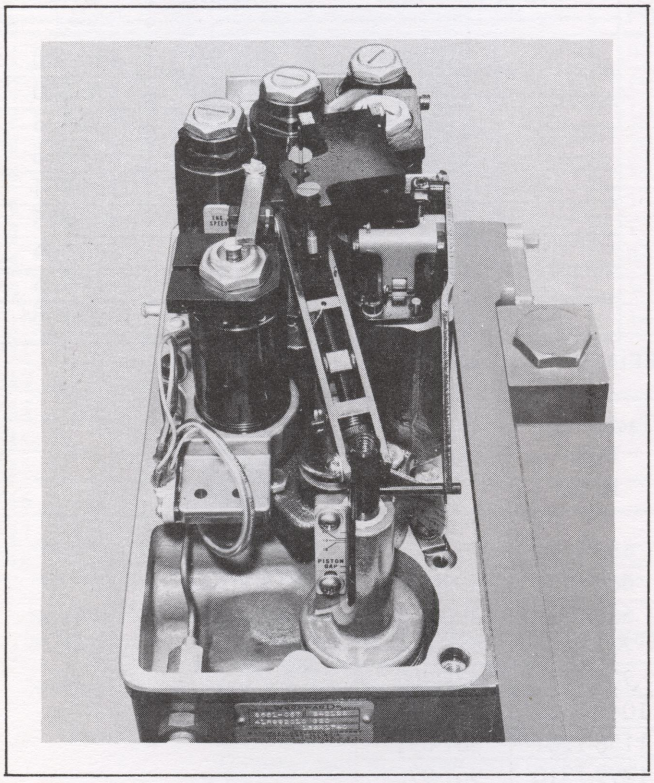

FIG. 1. TWO-SLOPE PRESSURE-BIAS GOVERNOR.

FIG. 2, E-18392A

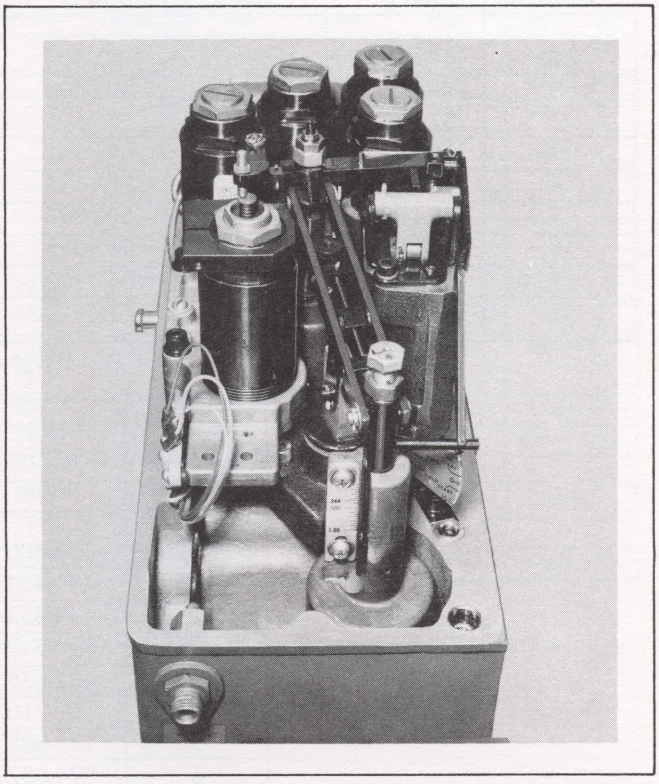

FIG. 2. FUEL-LIMITING GOVERNOR (CONVERTED).

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

Verify numbers for parts, tools, or material by using the Renewal Parts or Tool Catalogs, or contact your General Electric representative for assistance. Do not order from this publication.

GENERAL ELECTRIC

TABLE A*, SPEED SCHEDULE

Throttle Position	Engine Crankshaft RPM	Tachometer Drive RPM	Governor Drive Shaft RPM
Idle	390-410	579-609	439-447
1	390-410	579-609	439-447
2	466-506	692-752	523-553
3	552-592	820-880	618-648
4	648-668	963-993	725-733
5	724-764	1075-1135	809-839
6	820-840	1218-1248	915-923
7	906-926	1346-1376	1010-1018
8	995-1005	1479-1493	1103-1111

TABLE B*, SPEED SCHEDULE

Throttle Position	Engine Crankshaft RPM	Tachometer Drive RPM	Governor Drive Shaft RPM
Idle	422-429	627-637	467-475
1	422-429	627-637	467-475
2	497-524	738-778	550-580
3	583-610	866-906	645-675
4	679-686	1008-1019	751-759
5	754-782	1120-1161	835-866
6	850-857	1262-1273	941-949
7	936-943	1390-1400	1036-1044
8	1020-1030	1515-1526	1131-1139

TABLE C*, SPEED SCHEDULE

Throttle Position	Engine Crankshaft RPM	Tachometer Drive RPM	Governor Drive Shaft RPM
Idle	444-453	660-673	492-500
1	444-453	660-673	492-500
2	519-549	771-816	576-606
3	606-636	900-945	671-702
4	702-710	1043-1055	777-785
5	778-808	1156-1201	861-891
6	874-882	1299-1310	967-975
7	960-968	1426-1438	1062-1070
8	1045-1055	1553-1568	1158-1166

TABLE C_1*, SPEED SCHEDULE

Throttle Position	Engine Crankshaft RPM	Tachometer Drive RPM	Governor Drive Shaft RPM
Idle	448-452	665-671	496-500
1	448-452	665-671	496-500
2	508-535	754-794	563-593
3	597-602	887-894	662-666
4	653-680	970-1010	724-754
5	726-755	1078-1121	805-835
6	808-818	1200-1215	896-904
7	880-890	1307-1322	979-985
8	958-962	1423-1429	1060-1064

TABLE C_2*, SPEED SCHEDULE

Throttle Position	Engine Crankshaft RPM	Tachometer Drive RPM	Governor Drive Shaft RPM
▫Low Idle	372-400	553-594	411-441
Idle	444-453	660-673	492-500
1	444-453	660-673	492-500
2	519-549	771-816	576-606
3	606-636	900-945	671-702
4	702-710	1043-1055	777-785
5	778-808	1156-1201	861-891
6	874-882	1299-1310	967-975
7	960-968	1426-1438	1062-1070
8	1045-1055	1553-1568	1158-1166

▫Low Idle speed is the result of solenoids "A" and "D" being energized.

***CAUTION:** *These speed schedules are primarily intended to be used for checking governors on a test stand. They may be used on a locomotive after first establishing the specific speed schedule as presented on the locomotive electrical schematic diagram.*

TABLE D, SOLENOID ADJUSTMENT SEQUENCE

Throttle Position	Solenoid Adjustment Sequence	Solenoid Energized			
		A	B	C	D
Stop					X
Idle					
1	"C" 5				
2		X			
3				X	
4	"B" 4	X		X	
5			X	X	X
6	Base Speed Nut 1	X	X	X	X
7	"A" 3		X	X	
8	"D" 2	X	X	X	

TABLE D_1, SOLENOID ADJUSTMENT SEQUENCE

Throttle Position	Solenoid Adjustment Sequence	Solenoid Energized			
		A	B	C	D
Stop					X
Idle					
1	"C" 5				
2		X			
3	"B" 4			X	
4		X		X	
5			X	X	X
6	Base Speed Nut 1	X	X	X	X
7	"A" 3		X	X	
8	"D" 2	X	X	X	

TABLE E, LOW-WATER AND LOW-OIL TRIP SETTINGS

	Low-Water Trip Settings								Low-Oil Trip Settings				
		Trip Pressure			Trip Pressure		Trip Pressure			Trip Pressure		Trip Pressure	
Line	Notch	PSI	In. Hg	Notch	PSI	Notch	PSI	In. Hg	Notch	PSI	Notch	PSI	Note References
E_1	1	0	-	2	0-3	8	10-14	-	1	7-12	8	36-43	Note 5
E_2	1	0	-	2	0-3	8	11-13	-	1	7-12	8	47-52	Notes 2, 5
E_3	1	0	-	2	0-3	8	11-13	-	1	6-11	8	43-50	Note 5
E_4	1	0	-	2	0-3	8	11-13	-	1	5-10	8	41-48	Note 5
E_5	1	0	-	2	0-3	8	11-13	-	1	7-12	8	45.5-46.5	Note 5
E_6	1	0	-	2	0-3	8	11-13	-	1	6-11	8	43.5-44.5	Note 5
E_7	1	0	-	2	0-3	8	11-13	-	1	5-10	8	41.5-42.5	Note 5
E_8	1	0	-	2	0-3	8	10-14	-	1	7-12	8	39.5-40.5	Note 5
E_9	1	2	3.5-4.5	-	-	8	11-15	22-29	1	7-14	8	46-48	Notes 3, 6
E_{10}	1	2	3.5-4.5	-	-	8	11-15	22-29	1	6-13	8	43.5-44.5	Note 3
E_{11}	1	2	3.5-4.5	-	-	8	11-13	22-27	1	7-12	8	47-52	Note 4
E_{12}	1	-	3.5-4.5	-	-	8	-	22-27	1	6-11	8	43.5-44.5	-
E_{13}	1	-	3.5-4.5	-	-	8	-	22-27	1	7-12	8	45.5-46.5	Note 4
E_{14}	1	2	3.5-4.5	-	-	8	11-15	22-29	1	7-14	8	46-48	Notes 3,4,6
E_{15}	1	-	3.5-4.5	-	-	8	-	22-29	1	6-11	8	43.5-44.5	-
E_{16}	1	-	3.5-4.5	-	-	8	-	22-29	1	6-11	8	43.5-44.5	Note 3
E_{17}	1	-	3.5-4.5	-	-	8	-	22-29	1	7-14	8	45.5-46.5	-
E_{18}	1	2	3.5-4.5	-	-	8	11-15	22-29	1	7-12	8	46-48	Notes 3,4,6

NOTE 1: Low-water and low-oil time delay – Idle and Notch 1 only – 40 to 50 seconds – with screw in triangular plate.

NOTE 2: Governors 41R992010G50 (136X1945-2) and 41R992010G127 (136X2175) have a screw in the triangular plate, but it is adjusted to give time delay in all notches.

NOTE 3: For accuracy, set the low-water trip to In. Hg values instead of psi values as follows:

AT IDLE:

Governor trips (light on; speed drops) at 3.5-4.5 In. Hg

Governor must shut down (zero fuel) at 2 In. Hg

AT N8:

Governor trips (light on; speed drops) at 22-29 In. Hg

The low-oil trip feature must perform in the following manner:

Governor trips (light on; speed drops) at the Notch 8 trip setting.

Governor must shut down (zero fuel) at 4 psi lube-oil pressure.

NOTE 4: Governor has the time delay set in N1 and N2.

NOTE 5: Values given in Tables E_1 thru E_8 are for governors as originally manufactured. At the earliest opportunity, reset the low-water trip pressure value for Notch 1 at 3.5-4.5 In. Hg. Disregard the Notch 2 setting and retain the Notch 8 setting as given.

NOTE 6: Low-water and low-oil time delay is 35 to 45 seconds.

TABLE F
LOAD CONTROL SPECIFICATIONS

Line	Potentiometer Resistance (Ohms Total)	Servomotor Pressure (Vane Stationary) (PSI)	Maximum Field to Minimum Field ("ORS" Energized) (Seconds)	Maximum Field to Mininum Field (Seconds)	Minimum Field to Maximum Field (Seconds)	Power Piston Gap to Load Control Setting					
						Throttle Position	Power Piston Gap (In.)	Pilot Valve Indicator Position	Throttle Position	Power Piston Gap (In.)	Pilot Valve Indicator Position
F_1	44	25-50	Less than 2.4	15-25	25-35	8	0.344	Zero	1	1.000	Max field start line
F_2	44	25-50	Less than 2.4	25-35 / 8-12	25-35 / 8-12	8	0.344	Zero	1	1.000	Max field start line
F_3	44	25-50	Less than 2.4	30-40 / 17-24	30-40 / 17-25	8	0.344	Zero	1	1.000	Max field start line
F_4	44	25-50	Less than 2.4	25-35 / 8-12	25-35 / 8-12	8	0.344	Zero	Low Idle	1.000	Max field start line
F_5	44	25-50	8-12	30-40 / 17-24	30-40 / 17-25	8	0.344	Zero	1	1.000	Max field start line
F_6	44	25-50	Less than 2.4	30-40 / 8-12	30-40 / 17-25	8	0.344	Zero	1	1.000	Max. field start line
F_7	44	25-50	Less than 2.4	30-40 / 8-12	30-40 / 17-25	8	0.344	Zero	Low Idle	1.000	Max field start line
F_8	44	25-50	Less than 2.4	30-40 / 8-12	30-40 / 17-25	8	0.344	Zero	Low Idle	1.000	High max field start line

TABLE G
FUEL LIMITER ADJUSTMENT

Line	Adjustment of the Fuel Limiter	Manifold Pressure (In. Hg)	Power Piston Gap (In.)†	Governor Speed
G1	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at....	30 (Absolute)*	0.680*	Notch 8
	Speed reduced (approx. 10 rpm) at ..... (tip fuel-limit cam if necessary)	49 (Absolute)	0.344	Notch 8
G2	Check clearance between nut and lever at ..... (See Note 1)	.....	.....	Notch 8
	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	30 (Absolute)	0.700	Notch 8
	Speed reduced (approx. 10 rpm) at ..... (tip fuel-limit cam if necessary)	49 (Absolute)	0.344	Notch 8
G3	Check clearance between nut and lever at ..... (See Note 1)	.....	.....	Notch 8
	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	0 (Gage)	0.815	Notch 8
	Check speed reduction (approx. 10 rpm) at	2 (Gage)	0.700	Notch 8
	Check speed reduction (approx. 10 rpm) at	6 (Gage)	0.520	Notch 8
	Check speed reduction (approx. 10 rpm) at	10 (Gage)	0.450	Notch 8
	Check speed reduction (approx. 10 rpm) at	16 (Gage)	0.344	Notch 8
G4	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	0 (Gage)	0.600	Notch 8
	Speed reduced (approx. 10 rpm) at ..... (tip fuel-limit cam if necessary)	12 (Gage)	0.344	Notch 8
G5	Check clearance between nut and lever at ..... (See Note 1)	.....	.....	Notch 8
	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	0 (Gage)	0.600	Notch 8
	Check speed reduction (approx. 10 rpm) at	2 (Gage)	0.490	Notch 8
	Check speed reduction (approx. 10 rpm) at	4 (Gage)	0.380	Notch 8
	Check speed reduction (approx. 10 rpm) at	5 (Gage)	0.344	Notch 8
	Check speed reduction (approx. 10 rpm) at	7 (Gage)	0.310	Notch 8
G6	Check clearance between nut and lever at ..... (See Note 1)	.....	.....	Notch 8
	Adjust the fuel limit screw to reduce speed (approx. 10 rpm) at ...	0 (Gage)	0.805	Notch 8
	Check speed reduction (approx. 10 rpm) at	2 (Gage)	0.705	Notch 8
	Check speed reduction (approx. 10 rpm) at	6 (Gage)	0.618	Notch 8
	Check speed reduction (approx. 10 rpm) at	10 (Gage)	0.525	Notch 8
	Check speed reduction (approx. 10 rpm) at	18 (Gage)	0.344	Notch 8
G7	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	0 (Gage)	0.700	Notch 8
	Speed reduced (approx. 10 rpm) at ..... (tip fuel-limit cam if necessary)	18 (Gage)	0.344	Notch 8
G8	Adjust the fuel-limit screw to reduce speed (approx. 10 rpm) at ...	30 (Absolute)	0.650	Notch 8
	Speed reduced (approx. 10 rpm) at ..... (tip fuel-limit cam if necessary)	47 (Absolute)	0.344	Notch 8

†All gap dimensions – allow tolerance of ± 0.015 in.

*Or 29 in. Hg (absolute) at 0.700-in. power piston gap.

NOTE 1: "ORS" should always be activated just before the fuel limiter causes a reduction in speed. As "ORS" is being activated, there should be a 0.005 to 0.015-in. clearance between the fuel-limit adjusting nut and the fuel-limit lever.

TABLE H
GOVERNOR BIAS SETTINGS

Line	Adjustment of the Pressure-Bias Load Control	Governor Speed	Power Piston Gap (In.)	Manifold Pressure (In. Hg)
H_1	With load control balanced, adjust first screw to start moving the load control toward minimum field ..	Notch 8	0.344	See Governor Data Table I, column 13
	Adjust the second screw to start the load control toward minimum field at.....	Notch 8	0.800	30 (Absolute)
H_2	With load control balanced, adjust first screw to start moving the load control toward minimum field ..	Notch 8	0.344	See Governor Data Table I, column 13
	Adjust the second screw to start the load control toward minimum field at.....	Notch 8	0.740*	30 (Absolute)*
H_3	With load control balanced, adjust first screw to start moving the load control toward minimum field ..	Notch 8	0.344	See Governor Data Table I, column 13
	Adjust the second screw to start the load control toward minimum field at.....	Notch 8	0.770**	30 (Absolute)**
H_4	With load control balanced, adjust first screw to start moving the load control toward minimum field ..	Notch 8	0.344	See Governor Data Table I, column 13
	Adjust the second screw to start the load control toward minimum field at.....	Notch 8	0.700	32 (Absolute)
H_5	With load control balanced, adjust first screw to start moving the load control toward minimum field ..	Notch 8	0.344	See Governor Data Table I, column 13
	Adjust the second screw to start the load control toward minimum field at.....	Notch 8	0.770	0 (Gage)
H_6	With load control balanced, adjust No. 2 screw to start moving the load control toward minimum field at.....	Notch 8	0.760	0 (Gage)
H_7	With load control balanced, adjust No. 2 screw to start moving the load control toward minimum field at.....	Notch 8	0.700	30 (Absolute)
H_8	With load control balanced, adjust No. 2 screw to start moving the load control toward minimum field at	Notch 8	0.770	30 (Absolute)
H_9	With load control balanced, adjust No. 2 screw to start moving the load control toward minimum field at	Notch 8	0.730	30 (Absolute)

*Alternate setting – 0.800 in. at 27 in. Hg (Absolute)
**Alternate setting – 0.800 in. at 28-1/2 in. Hg (Absolute)

TABLE J, SETTING SHUTDOWN GAP

SET THE SHUTDOWN GAP AT 0.030-0.035 IN. WITH THE GOVERNOR SET UP FOR A REDUCED IDLE SPEED; THAT IS, SET THE GAP WITH "A" AND "D" SOLENOIDS ENERGIZED.

TABLE I, PRESSURE BIAS GOVERNOR DATA

Line	GE Drawing No.	Woodward Model	GE Part No.	Letters Listed in Columns Below Refer to Specific Tables: Speed Schedule	Solenoid Adjustment Sequence	Low-Water and Low-Oil Shutdown Specifications	Load-Control Specifications	Fuel-Limiter Settings	Pressure-Bias Load-Control Settings	Manifold Pressure, In. Hg Absolute (Used with Col. 12)	Speed Setting Piston Timing: Time (Seconds) Idle to Notch 8	Time (Seconds) Notch 8 to Idle	Solenoid Resistance (Ohms, Approx.) (A, B, C, D and 0)	Speed-Setting Piston Stop Screw Setting	Shutdown Gap (In.)	Compensating Needle Valve Adjustment	Start of Travel, Sensor Piston Notch 6, In. Hg Absolute (Absolute unless designated △)	Power Piston Gap Tail Rod Movement (In.): At Notch 8, Full Load	At Idle
1	41R992010G38	8552-575	136X1935	C_1	D_1	E_1	F_2	G_1	H_1	69.0	7-20	5-15	700		0.030-0.035		71-73	0.344 / 0.812	1.000 / 0.156
2	41R992010G40	8552-570	136X1740-1	C	D	E_2	F_1	G_2		75.0	14-22	7-15					77-79		
3	41R992010G41	A8552-570	136X1745-1	B		E_3				69.0							71-73		
4	41R992010G42	B8552-570	136X1885-1	B		E_3				65.0							67-69		
5	41R992010G43	C8552-570	136X1910-1	A		E_4				62.0							64-66		
6	41R992010G44	D8552-570	136X1915-1	A		E_4				65.0							67-69		
7	41R992010G45	E8552-570	136X1930-1	C		E_2				69.0							71-73		
8	41R992010G46	8552-569	136X1730-2	A		E_4				65.0							67-69		
9	41R992010G47	A8552-569	136X1720-2	A		E_4				62.0							64-66		
10	41R992010G48	B8552-569	136X1725-2	B		E_3				69.0							71-73		
11	41R992010G49	C8552-569	136X1925-1	C		E_2	F_1	G_2	H_1	69.0	14-22						71-73		
12	41R992010G50	8552-588	136X1945-2	C		E_2	F_2	G_1	H_2	69.0	7-13						71-73		
13	41R992010G51	8552-870	136X1950	C		E_2		G_1	H_3	62.0	14-22						64-66		
14	41R992010G55	8552-836	136X1740-2	C		E_2		G_2	H_1	75.0							77-79		
15	41R992010G56	A8552-836	136X1745-2	B		E_3				69.0							71-73		
16	41R992010G57	B8552-836	136X1885-2	B		E_3				65.0							67-69		
17	41R992010G58	C8552-836	136X1910-2	A		E_4				62.0							64-66		
18	41R992010G59	D8552-836	136X1915-2	A		E_4				65.0							67-69		
19	41R992010G60	E8552-836	136X1930-2	C		E_2	F_2			69.0							71-73		
20	41R992010G61	8552-878	136X1955	C		E_5	F_1			75.0							77-79		
21	41R992010G62	8552-880	136X1740-3	C		E_5	F_2			75.0	14-22						77-79		
22	41R992010G63	8552-730	136X1960	C		E_5	F_1			75.0	7-20						77-79		
23	41R992010G64	A8552-880	136X1745-3	B		E_6	F_2			65.0	14-22						67-69		
24	41R992010G65	B8552-880	136X1885-3	B		E_6	F_2			65.0							67-69		
25	41R992010G66	C8552-880	136X1910-3	A		E_7	F_2			62.0							64-66		
26	41R992010G67	D8552-880	136X1915-3	A		E_7	F_2			65.0							67-69		
27	41R992010G68	E8552-880	136X1930-3	C		E_5	F_2			65.0							67-69		
28	41R992010G70	8552-997	136X1975	B	D	E_6	F_2	G_2	H_1	65.0	14-22	7-15					67-69		
29	41R992010G74	8554-100	136X1935-1	C_1	D_1	E_8	F_2	G_1	H_1	69.0	15-20	5-15					71-73		
30	41R992010G75	F8552-880	136X1740-4	C	D	E_5	F_2	G_2	H_4	70.0	14-22	7-15					72-74		
31	41R992010G78	8554-192	136X1990	C		E_5	F_2	G_1	H_3	62.0					0.030-0.035		64-66		
32	41R992010G91	A8552-870	136X2045	C_2		E_{11}	F_4	G_1	H_3	62.0					J		64-66		
33	41R992010G93	A8554-192	136X2070	A		E_7	F_2	G_1	H_3	62.0					0.060-0.065		64-66		
34	41R992010G96	A8552-880	136X2090	B		E_{12}	F_2	G_2	H_1	65.0							67-69		
35	41R992010G103	B8554-192	136X1990-1	C		E_{13}	F_2	G_1	H_3	57.0							59-61		
36	41R992010G106	8556-657	136X2125	C		E_{13}	F_6	G_7	H_5	26.5-27.5△							30-35△		
37	41R992010G107	8556-670	136X2130	C		E_9	F_6	G_7	H_6	–									
38	41R992010G108	8556-881	136X2135	C		E_{13}	F_6	G_7	H_6	–									
39	41R992010G109	8558-024	136X2145	C		E_{13}	F_6	G_7	H_6	–									
40	41R992010G110	8558-001	136X2130-1	C		E_9	F_6	G_7	H_6	–									
41	41R992010G113	8558-303	136X1740-6	C		E_{17}	F_6	G_7	H_6	–									
42	41R992010G114	A8558-303	136X1745-5	B		E_{15}	F_6	G_7	H_6	–									
43	41R992010G115	8558-304	136X2060-1	C		E_9	F_6	G_7	H_6	–									
44	41R992010G116	A8558-304	136X2065-1	B		E_{10}	F_6	G_7	H_6	–									
45	41R992010G117	8558-305	136X2005-1	C		E_{17}	F_6	G_7	H_6	–					0.060-0.065		30-35△		
46	41R992010G118	8558-338	136X2045-1	C_2		E_{11}	F_4	G_8	H_9	–					J		64-66		
47	41R992010G119	8558-381	136X2130-2	C		E_9	F_6	G_7	H_6	–					0.060-0.065		30-35△		
48	41R992010G120	8558-444	136X2165	C		E_9	F_6			–					0.060-0.065				
49	41R992010G121	8558-681	136X2165-1	C_2		E_{14}	F_7			–					J				
50	41R992010G122	8558-682	136X1740-7	C		E_{17}	F_6			–					0.060-0.065				
51	41R992010G123	A8558-682	136X1745-6	B		E_{15}				–									
52	41R992010G124	8558-683	136X2060-2	C		E_9				–									
53	41R992010G125	A8558-683	136X2065-2	B		E_{16}				–									
54	41R992010G126	8558-684	136X2005-2	C		E_{17}	F_6	G_7	H_6	–	14-22				0.060-0.065		30-35△		
55	41R992010G127	8558-716	136X2175	C_2		E_{11}	F_4	G_1	H_2	69.0	7-13				J		70-72		
56	41R992010G128	8558-941	136X2196	C_2		E_{18}	F_8	G_7	H_6	–	14-22				J		30-35△		
57	41R992010G129	8558-942	136X2165-2	C_2		E_{18}	F_8	G_7	H_6	–	14-22				J		30-35△		
58	41R992010G131	8570-291	136X2206	C_2		E_{18}	F_8	G_7	H_6	–	14-22				J		30-35△		
59	41R992010G132	8570-292	136X2207	C_2	D	E_{18}	F_8	G_7	H_6	–	14-22	7-15	700		J		30-35△	0.344 / 0.812	1.000 / 0.156
Column	1	2	3	7	8	9	10	11	12	13	14	15	16	17	18	19	20	23	24

Back out 1-1/2 to 2 Turns

Back out 1/4 to 1/2 Turns

Back out 3 Turns

NOTES:

△Gage pressure.

*These dimensions exist "at shutdown" only; dimensions should change shortly after shutdown when the overspeed link expands in length.

**Otherwise Same As.

△△NOTE: Some governors have been adjusted to allow a low idle speed. When so adjusted:

a. Woodward Model number is preceded by the letter "A."

b. Use Tables C_2, E_{14}, F7 and J.

Speed Setting Piston Timing: Idle to Notch 8	Speed Setting Piston Timing: Time (Seconds) Notch 8 to Idle	Solenoid Resistance (Ohms, Approx.) (A, B, C, D and 0)	Speed-Setting Piston Stop Screw Setting	Shutdown Gap (In.)	Compensating Needle Valve Adjustment	Start of Travel, Sensor Piston Notch 6, In. Hg Absolute (Absolute unless designated △)	Power Piston Gap/ Tail Rod Movement (In.): At Notch 8, Full Load	Power Piston Gap/ Tail Rod Movement (In.): At Idle	Power Piston Gap/ Tail Rod Movement (In.): At Shutdown*	Special Features, Remarks, Etc.
7-20	5-15	700		0.030-0.035		71-73	0.344 0.812	1.000 0.156	1.156 0	ORS lever omitted; dual-speed load-control timing
4-22	7-15					77-79				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A.**136X1740
						71-73				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1745
						67-69				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1885
						64-66				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1910
						67-69				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1915
						71-73				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1930
						67-69				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1730-1
						64-66				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1720-1
						71-73				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1725-1
4-22						71-73				Fuel limit set at 49 in. Hg; 11-13 psi water shutdown; O.S.A. 136X1925
7-13			Back out 1-1/2 to 2 Turns			71-73				Cover over-compensating screw; dual-speed load-control timing; fast dump eliminated; 10-second speeder piston; ORS lever omitted
4-22						64-66				Cover over-compensating screw; dual-speed load-control timing; fast dump eliminated; ORS lever omitted
						77-79				Dual-speed load-control timing; O.S.A.**136X1740-1
						71-73				Dual-speed load-control timing; O.S.A. 136X1745-1
						67-69				Dual-speed load-control timing; O.S.A. 136X1885-1
						64-66				Dual-speed load-control timing; O.S.A. 136X1910-1
						67-69				Dual-speed load-control timing; O.S.A. 136X1915-1
						71-73				Dual-speed load-control timing; O.S.A. 136X1930-1
						77-79				46-psi lube-oil shutdown; O.S.A. 136X1740-1
4-22						77-79				46-psi lube-oil shutdown; O.S.A. 136X1740-2
7-20						77-79				46-psi lube oil shutdown; O.S.A. 136X1740
4-22					Back out 1/4 to 1/2 Turns	67-69				44-psi lube-oil shutdown; O.S.A. 136X1745-2
						67-69				44-psi lube-oil shutdown; O.S.A. 136X1885-2
						64-66				42-psi lube-oil shutdown; O.S.A. 136X1910-2
						67-69				42-psi lube-oil shutdown; O.S.A. 136X1915-2
						67-69				46-psi lube-oil shutdown; O.S.A. 136X1930-2
4-22	7-15					67-69				16-point connector and continuity circuit; O.S.A. 136X1745-3
5-20	5-15					71-73				40-psi lube-oil shutdown; O.S.A. 136X1935
4-22	7-15					72-74				Pressure-bias settings lowered; O.S.A. 136X1740-3
				0.030-0.035		64-66				46-psi lube-oil shutdown; O.S.A. 136X1950
				J		64-66				Special shutdown gap; O.S.A. 136X1950
				0.060-0.065		64-66				Different speed; ORS lever omitted; O.S.A. 136X1990
						67-69				Different shutdown gap and low-water setting; O.S.A. 136X1745-3
						59-61				Different pressure-bias setting; O.S.A. 136X1990
						30-35△				Altitude compensating; ORS lever omitted; gage-type bellows
										Modulating governor; No. 1 pressure bias screw and ORS lever omitted; new cam; gage-type bellows
										Altitude compensating; O.S.A. 136X2130
										Altitude compensating; different altitude setting; O.S.A. 136X2135
			Back out 3 Turns							Corrosion-resistant power-piston tail rod; carbide contacts in triangular plate and floating lever; O.S.A. 136X2130
										No. 1 pressure-bias screw omitted; new cam; 12-pin connector; replaces 136X1740-5 and 136X2115
										No. 1 pressure-bias screw omitted; new cam; 12-pin connector; replaces 136X1745-4
										Modulating governor; No. 1 pressure-bias screw omitted; new cam; 12-pin connector; replaces 136X2060
										Modulating governor; No. 1 pressure-bias screw omitted; new cam; 12-pin connector; replaces 136X2065
				0.060-0.065		30-35△				No. 1 pressure-bias screw omitted; new cam; replaces 136X2005 and 136X2120
				J		64-66				Corrosion-resistant power-piston tail rod; carbide contacts in triangular plate and floating lever; No. 1 pressure-bias screw omitted; O.S.A. 136X2045
				0.060-0.065		30-35△				Lighter reset spring; O.S.A. 136X2130-1 △△
				0.060-0.065						ORS lever added; O.S.A. 136X2130-2 △△
				J						Add switch to ORS lever; special shutdown gap; O.S.A.**136X2165
				0.060-0.065						Add ORS lever; O.S.A. 136X1740-6
										Add ORS lever; O.S.A. 136X1745-5
										Add ORS lever; O.S.A. 136X2060-1
										Add ORS lever; O.S.A. 136X2065-1
4-22				0.060-0.065		30-35△				Add switch to ORS lever; O.S.A. 136X2005-1
7-13				J		70-72				Corrosion-resistant power-piston tail rod; carbide contacts in triangular plate and floating lever; similar to 136X1945-2
4-22				J		30-35△				Has lower N1 low oil setting, new oil level gage and power piston stop screw set at 0.260 in.; OSA 136X2130-2.
4-22				J		30-35△				Has lower N1 low oil setting, new oil level gage and power piston stop screw set at 0.260 in.; OSA 136X2165-1.
4-22				J		30-35△				N.C. contacts of overload switch wired in series with the brown wire to the load control potentiometer OSA 136X2165-2.
4-22	7-15	700		J		30-35△	0.344 0.812	1.000 0.156	1.156 0	12-point connector. OSA 136X2206
14	15	16	17	18	19	20	23	24	25	

TABLE II, FUEL-LIMITING GOVERNOR DATA

	Line	GE Drawing No.	Woodward Model	GE Part No.	Letters listed in columns below refer to specific tables: Speed Schedule	Solenoid Adjustment Sequence	Low-water and Low-oil Shutdown Specifications	Load-control Specifications	Fuel-limiter Settings	Speed-Setting Piston Timing: Time (Seconds) Idle to Notch 8	Speed-Setting Piston Timing: Time (Seconds) Notch 8 to Idle	Solenoid Resistance (Ohms, Approx.) (A, B, C, D, and 0)	Speed-Setting Piston Stop Screw Setting	Shutdown Gap (Inches)	Compensating Needle Valve Adjustment	Initial Cam Position, Sensor Piston, Notch 8, Zero In. Hg Gage Pressure	Pow Tail: At Notch 8, Full Load
	1	41R992010G76	8554-174	136X1740-5	C	D	E_5	F_3	G_3	14-22	7-15	700		0.030-0.035		0.215" from top	0.344 / 0.812
	2	41R992010G77	A8554-174	136X1745-4	B	D	E_6	F_3	G_3	↑	7-15	↑		↑		↑	↑
	3	41R992010G80	8554-268	136X2005	C	D	E_5	F_3	G_3		7-15						
	4	41R992010G81	B8554-174	136X1915-4	A	D	E_7	F_3	G_3		7-15						
	5	41R992010G83	8554-480	136X2015	C	D	E_5	F_3	G_3		7-15						
	6	41R992010G85	8554-890	136X2030	C	D	E_5	F_3	G_3		7-15		Back out 1-1/2 to 2 turns				
	7	41R992010G86	8554-950	136X2060	C	D	E_9	F_3	G_3		7-15						
	8	41R992010G87	A8554-950	136X2065	B	D	E_{10}	F_3	G_3		7-15						
	9	41R992010G89	8556-042	136X2035	C	D	E_5	F_3	G_3		7-15						
	10	41R992010G90	8556-057	136X2040	C	D	E_9	F_3	G_3		7-15						
	11	41R992010G92	A8554-480	136X2055	C	D	E_5	F_3	G_3	↓	7-15			↓		↓	
	12	41R992010G94	8556-197	136X2075	A	D	E_7	F_3	G_3	14-22	7-15			0.030-0.035		0.215" from top	
	13	41R992010G95	8556-434	136X2085	C_2	D	E_{13}	F_4	G_4	7-13	7-15			J		0.110"-0.140" from top	
	14	41R992010G99	8556-499	136X2095	C	D	E_{13}	F_3	G_3	14-22	7-15		↑	0.060-0.065	Back out 1/4 to 1/2 turns	0.215" from top	
	15	41R992010G100	C8554-174	136X2100	C	D	E_{13}	F_3	G_5	↑	7-15			↑		↑	
	16	41R992010G101	8556-506	136X2105	C	D	E_{13}	F_5	G_3		7-15					↓	
	17	41R992010G102	8556-546	136X2110	C	D	E_9	F_5	G_3		7-15		Back out 3 turns			0.215" from top	
	18	41R992010G104	8556-582	136X2115	C	D	E_{13}	F_3	G_6	↓	7-15			↓		0.300" from top	
Δ	19	41R992010G105	8556-583	136X2120	C	D	E_{13}	F_3	G_6	14-22	7-15	↓		0.060-0.065		0.300" from top	↓
	20	41R992010G130	8570-071	136X2202	C_2	D	E_{13}	F_4	G_4	7-13	7-15	700	↓	J	↓	0.110-0.140 in. from top	0.344 / 0.812
	Column	1	2	3	7	8	9	10	11	14	15	16	17	18	19	20	23

*These dimensions exist "at shutdown" only; dimensions should change shortly after shutdown when the overspeed link expands in length.
**Otherwise Same As.
ΔRevisions are indicated by marginal bars.

TABLE II, FUEL-LIMITING GOVERNOR DATA

ed-ing ton ning Time (Seconds) Notch 8 to Idle	Solenoid Resistance (Ohms, Approx.) (A, B, C, D, and 0)	Speed-Setting Piston Stop Screw Setting	Shutdown Gap (Inches)	Compensating Needle Valve Adjustment	Initial Cam Position, Sensor Piston, Notch 8, Zero In. Hg Gage Pressure	Power Piston Gap/ Tail Rod Movement (In.)			Special Features, Remarks, etc.
						At Notch 8, Full Load	At Idle	At Shutdown*	
7-15	700		0.030-0.035		0.215" from top	0.344 / 0.812	1.000 / 0.156	1.156 / 0	Fuel-limiting governor (1050 rpm engine)
7-15	↑		↑		↑	↑	↑	↑	Fuel-limiting governor (1025 rpm engine)
7-15									16-point connector; O.S.A.**136X1740-5
7-15									Fuel-limiting governor (1000 rpm engine)
7-15		Back out 1-1/2 to 2 turns							Altitude-compensating; O.S.A. 136X1740-5
7-15									Altitude compensating; different altitude setting; O.S.A. 136X2015
7-15									Modulating governor; O.S.A. 136X1740-5
7-15				Back out 1/4 to 1/2 turns					Modulating governor; O.S.A. 136X1745-4
7-15									Altitude compensating; 16-pin connector; O.S.A. 136X2015
7-15									Modulating governor; O.S.A. 136X2005
7-15			↓		↓				Altitude-compensating; different altitude setting; O.S.A. 136X2015
7-15			0.030-0.035		0.215" from top				Altitude-compensating; different speed and altitude setting; O.S.A. 136X2015
7-15		↓	J		0.110"-0.140" from top				Special fuel-limit values; ORS lever omitted; 16-pin connector; fast dump eliminated; set for low idle speed
7-15		↑	0.060-0.065		0.215" from top				Altitude-compensating; different altitude setting; O.S.A. 136X2035
7-15			↑		↕				Special fuel limit values; O.S.A. 136X1740-5
7-15		Back out 3 turns							Slow override solenoid timing; O.S.A. 136X2005
7-15					0.215" from top				Slow override solenoid timing; O.S.A. 136X2040
7-15			↓		0.300" from top				Different fuel limit setting; new cam; O.S.A. 136X1740-5
7-15	↓		0.060-0.065		0.300" from top	↓	↓	↓	Different fuel limit setting; new cam; O.S.A. 136X2005
7-15	700	↓	J	↓	0.110-0.140 in. from top	0.344 / 0.812	1.000 / 0.156	1.156 / 0	Corrosion-resistant power-piston tail rod; carbide contacts in triangular plate and floating lever; new oil level gage; power piston stop screw set at 0.260 in.; OSA 136X2085.
15	16	17	18	19	20	23	24	25	

the overspeed link expands in length.

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